professional societies). This process began in the 1940s, and thus I have chosen the period 1940 to 1970 as the scope of my inquiry. In many respects, though, the endeavors of cell biologists were continuous with those of earlier scientists: Cells and their internal structure had been the focus of extensive investigation in nineteenth-century cytology. Yet, the name *cell biology* was deliberately chosen to demarcate the new discipline from cytology. Another discipline, biochemistry, had established itself at the beginning of the twentieth century to study the chemical activities within cells, with a particular focus on enzymes, and achieved remarkable success in its first four decades. Chapter 3 reviews these accomplishments, showing that each of these disciplines already was addressing aspects of what was to become the domain of cell biology: cell structures in cytology and chemical operations associated with cell structures in biochemistry. However, proceeding on their separate paths, they failed to integrate findings on cell structure and function into a unified account. Moreover, as noted above, a discipline is more than a domain. What most clearly differentiated early cell biology from both cytology and biochemistry was the nature of the investigations cell biologists pursued and the tools they employed.

The investigators who created cell biology were strongly committed to inquiry that related knowledge of the parts of the cell (organelles) and the chemical operations that took place in those parts. The methodologies that had been so successful in the early decades of biochemistry involved extracting the responsible enzymes and substrates from cells and studying reactions that did not depend on the specifics of cell structure. So for many biochemists, cells were unimportant. A number of cytologists, on the other hand, were eager to relate cell parts to chemical operations, but for the most part they lacked the tools to make the connections. Thus, despite the focus on cell structure and function by cytology and biochemistry, Chapter 3 shows that in 1940 there remained a terra incognita between these two fields.

Integration of cytological and biochemical approaches were critical for investigators to understand many of the mechanisms responsible for cell activities. However, there is one conspicuous instance of a cell mechanism for which cytologists figured out the basic mechanism schema without reliance on biochemistry – cell division. With the introduction of new dyes in the late nineteenth century, researchers such as Edouard van Beneden, Hermann Fol, and Walther Flemming were able to identify chromosomes in the cell nucleus and determine the sequence of operations in which they figured in cell division. Further, August Weisman and others recognized linkages between chromosomes and hereditary material, and Carl Correns determined how the events of cell division ensured the transmission of hereditary factors to daughter